

**Notice of Allowability**

Application No.

09/688,010

Applicant(s)

BELLEGARDA, JEROME R.

Examiner

James S. Wozniak

Art Unit

2626

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 4/24/2006.
2. ☒ The allowed claim(s) is/are 1,2,5-21 and 24-38 (now claims 1-34).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

## DETAILED ACTION

### *Response to Amendment*

1. In response to the office action from 1/24/2006, the applicant has submitted an amendment, filed 4/24/2006, amending claims 1, 20, 31, and 35, while arguing to traverse the art rejection based on the limitation regarding the claimed processing of a sequence of words using word agglomeration that replaces a sequence of words with an associated n-tuple sequence (*Amendment, Pages 9-12*). Applicant's arguments have been fully considered and claims 1-2, 5-21, and 24-38 are allowable over the prior art of record for the below reasons for allowance.
2. In response to the terminal disclaimer filed on 4/24/2006, the examiner has withdrawn the previous double patenting rejection.

### *Allowable Subject Matter*

3. **Claims 1-2, 5-21, and 24-38** are allowable over the prior art of record.

4. The following is an examiner's statement of reasons for allowance:

With respect to **Claims 1, 20, 31, and 35**, the prior art of record fails to explicitly teach or fairly suggest a method, program stored on a computer readable storage medium, or apparatus for speech command recognition wherein a spoken command sequence of words is recognized

utilizing a language model, the sequence of words is replaced by an associated n-tuple sequence comprising word n-tuples that are all strings of n consecutive words in the sequence (specification, Pages 16-18) and represented by a vector in semantic space using word agglomeration, the n-tuple sequence is classified using a semantic interface based on a distance measure between the n-tuple sequence and semantic training vectors (anchors) to identify a specific speech command (*equations 9 and 10, specification, page 20*), and the identified command is used to generate an appropriate action in a action generator.

Although it is well known in the art to utilize agglomerative clustering in speech command classification, as is evidenced by Gorin et al (*U.S. Patent: 5,860,063*) (*Col. 7, Line 38- Col. 8, Line 12*). Gorin's agglomerative clustering technique does not replace a sequence of words with an associated an associated n-tuple sequence comprising word n-tuples that are all strings of n consecutive words in the sequence, nor does Gorin make any mention of a semantic vector space. Thus, the word agglomeration technique recited in the presently claimed invention differs from that agglomeration process disclosed by Gorin.

Although Kamiya (*U.S. Patent: 5,122,951*) discloses a clustering method that replaces a word sequence with a corresponding sequence of concept numbers (*Col. 7, Line 36- Col. 8, Line 60*), Kamiya does not teach a method for word agglomeration, wherein a sequence of words is replaced with an associated an associated n-tuple sequence comprising word n-tuples that are all strings of n consecutive words in the sequence. Thus, the clustering method taught by Kamiya differs from the word agglomeration technique recited in the presently claimed invention.

Thus, claims 1, 20, 31, and 35 are allowable over the prior art of record.

Dependent claims 2, 5-19, 21, 24-34, and 36-38 further limit allowable independent claims, and thus, are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


### *Conclusion*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached at (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak  
6/14/2006

  
DAVID HUDSPETH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600